Claims

[c1] 1.Method for preventing coking of liquid hydrocarbon fuel in a liquid fuel supply system of a gaseous fuel/ liquid fuel combustion turbine comprising the step of injecting nitrogen gas into the liquid fuel supply system in an amount so that the nitrogen gas displaces a portion of the liquid hydrocarbon fuel adjacent the combustion turbine and separates remaining liquid hydrocarbon fuel in the liquid fuel supply system from the combustion turbine.

[c2] 2.Method as in claim 1 wherein the combustion turbine comprises at least one combustion chamber and the liquid fuel supply system includes at least one nozzle for delivering the liquid hydrocarbon fuel to the at least one combustion chamber of the combustion turbine and a valve adjacent the at least one nozzle, and the step of injecting nitrogen gas includes displacing the portion of the liquid hydrocarbon fuel through the valve and the at least one nozzle and into the at least one combustion chamber.

[c3] 3.Method as in claim 1 further comprising sealing the nitrogen gas in the liquid fuel supply system while the

combustion turbine combusts gaseous fuel.

[c4] 4.Method as in claim 1 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig.

[c5] 5.Method as in claim 1 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig up to about 250 psig.

[c6] 6.Method as in claim 4 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas for at least about 3 minutes.

[c7] 7.Method as in claim 1 wherein the step of injecting nitrogen gas comprises displacing at least about 15 % of the liquid hydrocarbon fuel in the liquid fuel supply system.

[c8] 8.Method as in claim 1 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas through an existing valve in the liquid fuel supply system.

[c9] 9.Method as in claim 1 further comprising stopping and cooling the combustion turbine before the step of injecting nitrogen gas and after the step of injecting nitrogen gas, sealing the nitrogen gas in the liquid fuel supply system, and thereafter combusting gaseous fuel in the

combustion turbine.

[c10] 10.Method as in claim 1 wherein the liquid fuel supply system comprises a liquid fuel flow divider and the method further comprises draining the liquid fuel flow divider before the step of injecting nitrogen gas.

[c11] 11.Method for preventing coking of liquid hydrocarbon fuel in a liquid fuel supply system of a gaseous fuel/liquid fuel combustion turbine, the combustion turbine comprising at least one combustion chamber and the liquid fuel supply system including at least one nozzle for delivering the liquid hydrocarbon fuel to the at least one combustion chamber of the combustion turbine and a valve adjacent the at least one nozzle, the method comprising the steps of:
injecting nitrogen gas into the liquid fuel supply system in an amount so that the nitrogen gas displaces through the valve and the at least one nozzle and into the at least one combustion chamber a portion of the liquid hydrocarbon fuel adjacent the combustion turbine and separates remaining liquid hydrocarbon fuel in the liquid fuel supply system from the combustion turbine;
closing the valve to seal the nitrogen gas in the liquid fuel supply system while the combustion turbine combusts gaseous fuel.

[c12] 12.Method as in claim 11 further comprising stopping and cooling the combustion turbine before the step of injecting nitrogen gas and after the step of injecting nitrogen gas, sealing the nitrogen gas in the liquid fuel supply system, and thereafter combusting gaseous fuel in the combustion turbine.

[c13] 13.Method as in claim 11 wherein the liquid fuel supply system comprises a liquid fuel flow divider and the method further comprises draining the liquid fuel flow divider before the step of injecting nitrogen gas.

[c14] 14.Method as in claim 11 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig.

[c15] 15.Method as in claim 11 wherein the step of injecting nitrogen gas comprises displacing at least about 15% of the liquid hydrocarbon fuel in the liquid fuel supply system.

[c16] 16.Method as in claim 11 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig up to about 250 psig.

[c17] 17.Method for preventing coking of liquid hydrocarbon fuel in a liquid fuel supply system of a gaseous fuel/liquid fuel combustion turbine comprising the steps of:

stopping combustion in the combustion turbine;
cooling the combustion turbine;
thereafter injecting nitrogen gas into the liquid fuel supply system in an amount so that the nitrogen gas displaces a portion of the liquid hydrocarbon fuel adjacent the combustion turbine and separates remaining liquid hydrocarbon fuel in the liquid fuel supply system from the combustion turbine;
sealing the nitrogen gas in the liquid fuel supply system; and
thereafter combusting gaseous fuel in the combustion turbine while maintaining the nitrogen gas in the liquid fuel supply system adjacent the combustion turbine.

[c18] 18.Method as in claim 17 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig.

[c19] 19.Method as in claim 17 wherein the step of injecting nitrogen gas comprises displacing at least about 15% of the liquid hydrocarbon fuel in the liquid fuel supply system.

[c20] 20.Method as in claim 17 wherein the step of injecting nitrogen gas comprises injecting the nitrogen gas at a pressure of at least about 120 psig up to about 250 psig.